

Differentiation of Cardialgia

Bon EI* and Otlivanchik N I

Grodno State Medical University, Gorkogo St, Grodno, Republic of Belarus

***Corresponding author:** Elizaveta I Bon, Candidate of biological science, Assistant professor of pathophysiology department named D. A. Maslakov, Grodno State Medical University, Grodno State Medical University, 80 Gorky St, 230009, Grodno, Belarus

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ABSTRACT

Heart pain (cardialgia) is one of the most common symptoms of various diseases. Some pathologies do not pose a threat to life. But there are also those that require urgent hospitalization and emergency medical care. It is important to consult a cardiologist in a timely manner, who can conduct a differential diagnosis and professionally distinguish pain of a neurological or other nature from pain associated with pathologies of blood vessels and the heart muscle.

Keywords: Cardialgia; Differential Diagnosis

Relevance

Heart pain (cardialgia) is one of the most common symptoms of various diseases. Some pathologies do not pose a threat to life. But there are also those that require urgent hospitalization and emergency medical care [1]. It is important to consult a cardiologist in a timely manner, who can conduct a differential diagnosis and professionally distinguish pain of a neurological or other nature from pain associated with pathologies of blood vessels and the heart muscle.

The following violations are often observed:

- Anxiety
- Depression,
- Getting caught up in one's feelings and experiences, focusing all life goals on health
- Fear of death
- Loss of self-identity.
- Panic attacks

Often the reason for differential diagnosis is cardialgia with somatoform dysfunction of the autonomic nervous system (psychogenic cardialgia). Psychogenic cardialgia also has its own characteristics,

but being functional, this pathology requires the exclusion of organic diseases of the cardiovascular system. Diagnostic signs of psychogenic cardialgia: – pain is varied in nature (stabbing, aching, burning, etc.); – localization - precordial region, apex of the heart, possibly behind the sternum, migration of pain is characteristic; – paroxysmal, varying in duration; – with irradiation to the shoulder, arm, scapula, not typical to the lower jaw; – provoked by emotional stress; – goes away on its own, after using sedatives, validol [2].

Results and Its Discussion

Cardiovascular disorders in neurotic and pseudoneurotic conditions can imitate almost any disease of the circulatory system and are most often regarded by therapists as manifestations of coronary heart disease, recurrent rheumatic carditis, infectious-allergic myocarditis or thyrotoxicosis. Meanwhile, early diagnosis of psychosomatic disorders is the main condition for their successful treatment; their untimely recognition contributes to the consolidation of cardiophobic mechanisms, hypochondriacal personality development and, ultimately, social disability of the patient. Atypical pain in the precordial region or behind the sternum requires the exclusion of acute or chronic diseases of the thoracic cavity and, first of all, reflux esophagitis, diffuse spasm or achalasia of the esophagus. The greatest difficulties usually arise when it is necessary to differentiate cardialgia from

acute coronary insufficiency caused by Prinzmetal's angina or the classic form of angina [3]. The so-called Prinzmetal angina is distinguished primarily by the undoubted cyclicity of each anginal attack. The duration of the increase and decrease in the intensity of painful sensations in such cases is most often the same, whereas with classic angina pectoris, the anginal attack usually ends suddenly. During an exacerbation of Prinzmetal's angina pectoris, the pain behind the sternum or in the heart area intensifies every few minutes and is repeated up to 30 times a day, forcing patients to take nitroglycerin almost continuously.

The most significant clinical feature of this form of angina is a fairly strict periodicity of the pain syndrome and a clearly defined individual pain rhythm. Attacks of Prinzmetal's angina develop in the vast majority of patients (primarily with normal or slightly changed coronary arteries) at a strictly defined time of day, most often at night (especially between 4 and 7 hours) and at the time of awakening. In this regard, many patients are able to anticipate and even predict the onset of the next anginal attack, and in some cases, they already begin to expect it at one time or another, and the disease thus acquires the character of obvious psychosomatic suffering. It is no coincidence that severe neurosis of fear, states of depression and aggression are noted during a special psychological study in all patients with Prinzmetal's angina, and in the majority of those examined, these personality changes are detected simultaneously with the first symptoms of coronary spasm.

Completely unchanged coronary arteries are detected during coronary angiography in almost 50% of patients with Prinzmetal's angina, and limited subtotal stenosis of the proximal portion of one of the large branches of any main coronary artery (with fairly full distal blood flow) is also on average in 50% of patients. The degree of coronary obstruction is not so great as to promote the distinct formation of collaterals, and is clearly insufficient to cause an anginal attack even with maximum physical exertion. Acute coronary insufficiency in Prinzmetal's angina is caused by transient occlusion of one of the large coronary arteries as a result of a sharp increase in the tone of this vessel and a critical reduction of coronary blood flow. Semi-selective or selective coronary angiography, performed at the height of the attack, makes it possible to record a sharp spasm of one of the large coronary arteries, which is manifested electrocardiographically by the rise of the ST segment in certain leads corresponding to the vascularization zone of this vessel [4]. Prinzmetal's angina pectoris is therefore often considered as an early (angiospastic) stage of coronary heart disease. Angiographic studies performed on the same patient at different times of the day indicate, however, a noticeable increase in the tone of the coronary arteries in the morning and a decrease in the daytime. Therefore, we can talk about daily fluctuations in the physical state of patients with Prinzmetal's angina, verified by coronary angiography [1,5].

The frequency of anginal attacks and a clear individual pain rhythm, the functional (angiospastic) nature of Prinzmetal's angina

and the clear therapeutic effect of a number of drugs, mainly calcium antagonists that relieve coronary vasoconstriction, with the failure of surgical treatment in most cases, indicate a significant similarity of this form of angina pectoris with neurotic cardialgia without organic changes in the coronary arteries, and with classic angina caused by atherosclerotic lesions of the coronary vessels. Prinzmetal's angina is, obviously, an intermediate stage between functional cardiovascular disorders, which are still completely reversible in a number of patients, and progressive organic changes in the coronary bed. This position is confirmed by the results of long-term observations of such patients. In more than half of all patients suffering from Prinzmetal's angina pectoris, there are two main possibilities for the further course of the pathological process: a gradual reduction and weakening of anginal attacks until their complete disappearance and the development of persistent long-term remission or progression of atherosclerosis with the transition of a single focal lesion to multiple and often diffuse (Prinzmetal's angina and classic angina pectoris are sometimes combined) [6]. In approximately 25% of patients, myocardial infarction occurs, after which attacks of Prinzmetal's angina either disappear or transform into classic angina pectoris; Almost 15% of such patients experience sudden death.

Of even more practical importance is the differentiation of neurotic cardialgia from classical angina. In contrast to true angina pectoris, cardialgia usually occurs at rest or in the morning, after waking up (and not while walking or climbing stairs), "more often in summer and when overheated (and not in winter, on cold and windy days); intensifies with forced breathing, bending or turning the torso and moderate movements of the upper limb or muscles of the shoulder girdle; is not accompanied by ischemic ECG changes during long-term monitoring (regardless of the intensity and duration of the pain attack) and is not relieved by nitrates, but is often relieved after light physical exercise [5,6] The more inadequate the severity of the subjective sensations experienced by the patient is to the objective changes he has, the more pronounced the frequency of cardialgia (in accordance with fluctuations in affective status), the more colorful, dramatic, noisy, according to V. P. Obratsov (1912), the picture of the pain syndrome itself, the greater the patient's hypochondriacal concern, the more likely the diagnosis of a neurotic condition [1].

Clear differentiation of neurotic cardialgia and chronic coronary insufficiency is facilitated by a clinoothostatic test or Valsalva test, which allows one to establish an increase in sympathetic tone. A test with P-blockers is very indicative in this regard: normalization of the ST segment and the transition of a negative or isoelectric T wave to positive 1 hour after taking 40 mg of propranolol indicate the functional nature of repolarization disorders [7]. To convincingly distinguish between functional cardialgia and organic damage to the coronary vessels, in some cases, indirect determination of myocardial perfusion is used (test with dosed physical activity; on a bicycle ergometer or treadmill, test with electrical stimulation of the atria), radiological (coronary angiography, ventriculography) and radionu-

clide (myocardial scintigraphy) research methods [1,8]. The most physiological, easily dosed and therefore most accepted in clinical practice test for indirect determination myocardial perfusion remains a test with physical activity on a bicycle ergometer or treadmill [9].

The only reliable electrocardiographic criterion for coronary insufficiency is ischemic depression of the 5th segment during maximum (submaximal) physical activity or within 2–5 minutes after its completion; Acutely occurring disturbances in heart rhythm and conduction during exercise tests are also considered as a manifestation of coronary insufficiency [10]. The depth of depression in the 5th segment is closely correlated with oxygen consumption by the heart muscle and an increase in lactate levels in the coronary venous sinus. Of unconditional interest is, in addition, the determination of the magnitude of the coronary reserve (i.e., the ratio between the resistance of the coronary arteries at rest and during their maximum dilatation caused by intravenous infusion of dipyridamole at a dose of 0.5 mg/kg) during catheterization of the cardiac cavities and coronary angiography; Normally, this coefficient reaches 5, and in case of chronic coronary insufficiency it can decrease to 1.5. The absence of objective signs of structural changes in the myocardium and coronary arteries and the progression of the course of the disease during the often-long-term existence of cardialgia, on the one hand, and the possibility of long-term spontaneous remissions or even complete disappearance of symptoms of “organic” heart damage under fairly favorable living conditions, on the other, give grounds for ultimately for the diagnosis of functional disorders of the heart [11,12].

Conclusion

The work used a sociological survey taking into account the voluntary consent of the participants. The respondents were 70 people of different age groups: under 18 years old - 6 people (8.6%), from 18 to 25 years old - 64 people (91.4%). Among them, 30 people (42.9%) and 40 people (57.1%) were male and female. When asked about the presence of pain in the heart, 31 people answered “yes,” which amounted to 44.3%, and 39 people answered “no,” which amounted to 55.7%, respectively. Next, we will look at people who have heart pain.

To the question: “Does pain occur at rest or during physical activity?” the following answers were received: at rest - 12 people (38.7%); during physical activity - 12 people (38.7%); and at rest and during physical activity - 7 people (22.6%).

To the question: “Intensity and nature of pain?” the following answers were received: most often dull, aching, stabbing, dull pain, aggravated by breathing - 21 people (67.7%); sharp, sharp, squeezing, pressing, burning, not aggravated by breathing - 10 people (32.3%).

To the question: “The rate of development of the attack?” the following answers were received: slowly increases and gradually stops, the duration of intensification and termination are not the same - 17 people (54.8%); slowly increases and gradually stops, the duration of

intensification and cessation are the same - 11 people (35.5%); the time of pain increase exceeds the duration of its easing - 3 people (9.7%).

To the question: “Localization of pain?” the following answers were received: mainly behind the sternum or in the heart area - 18 people (58.1%); you can accurately indicate the pain point - 7 people (22.6%); diffusely in the left half of the chest - 6 people (19.4%).

To the question: “Irradiation of pain?” the following answers were received: often absent - 24 people (77.4%); often in the left shoulder and left shoulder blade - 7 people (22.6%).

To the question: “Duration of pain?” the following answers were received: a few minutes - 22 people (71%); up to 10, sometimes up to 15 minutes - 6 people (19.4%); from several hours to several days - 3 people (9.7%).

To the question: “Is pain cyclical?” the following answers were received: can occur at any time of the day - 21 people (67.7%); present, usually worsens in the morning or against the background of anxious thoughts, with insomnia - 8 people (25.8%); present, more often at night during sleep or in the morning after waking up - 2 people (6.5%).

To the question: “Behavior during an attack?” the following answers were received: trying to freeze, slow down - 27 people (87.1%); moving more - 4 people (12.9%).

To the question: “Stops (decreases) after?” the following answers were received: it goes away on its own over time - 18 people (58.1%); cessation of physical activity - 10 people (32.3%); after taking nitroglycerin - 3 people (9.7%).

A detailed analysis of the problem under study showed that in the first place among heart diseases is “classical angina,” in second place is “neurotic angina,” and in third place is “Prinzmetal’s angina.” In such patients, it is important to correctly identify the syndrome for further treatment. Giving up bad habits, dosed physical activity and other prevention methods help prevent or delay the onset of neurotic cardialgia and any type of angina.

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